

NOTES ON A FEW EUCNEMIDÆ AND DESCRIPTIONS OF NEW ELATERIDÆ.

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Family Eucnemidæ, **Microrrhagus oblitus** Bonv.—Dr. Horn in his "Monograph of the species of the families Eucnemidæ, etc." in Trans. Am. Ent. Soc., XII, p. 34, says that this species is unknown to him and remarks that it apparently more closely resembles *subsiniatus* than any other of our species. The last named has the pronotum without anti-scutellar carina and the median line impressed posteriorly while *oblita* has a distinct ante-scutellar carina and no median impressed line. Of the former species I have two specimens and of the latter three specimens which answer the descriptions very well. Specimens collected by Mr. Shoemaker in Maryland and Virginia, however, show that these two characters are not constant. Some specimens have the prothorax distinctly impressed posteriorly and a distinct ante-scutellar carina, in others the carina is represented by a smooth, short line, which sometimes is slightly elevated behind; the impressed line may be distinct, faint or absent. The two species otherwise agree so closely that I have scarcely a doubt that they are one variable species.

Microrrhagus imperfectus Lee.—This species is said to resemble *subsiniatus* from which it is distinguished by the form of the posterior supplementary and the juxta-sutural carina. A single specimen, which I refer somewhat doubtfully to this species, has the outer carina of the juxta-sutural sulcus very distinctly obliterated behind but the posterior supplementary carina is not short but extends nearly to the middle. The length of the posterior and often the anterior supplementary carina is variable as a moderately large series will show and if no other characters are present to separate *imperfectus* from *oblitus* and *subsiniatus* the two last become synonyms of *imperfectus*.

The same variation in the characters mentioned above are noticed in my four specimens of *audax*, but this species has a differently formed and more coarsely punctured prothorax than the above named species. The variation or rather abbreviation of

the outer carina of the juxta-sutural sulcus is mentioned by Dr. Horn in *bonvouloiri*. Of this species I have two specimens which have this carina distinctly and somewhat suddenly obliterated behind, not differing otherwise from a specimen with entire carina.

Family Elateridæ.—*Drasterius thoracicus* n. sp. Moderately elongate; finely pubescent; color reddish brown, antennæ and legs paler; markings as in *dorsalis* (*elegans*)* and *amabilis*. Head black, moderately closely and not coarsely punctate. Antennæ not quite as long as head and prothorax. Prothorax about as long as wide; sides moderately arcuate in front; hind angles rather long and acute, not divergent and with an acute carina; surface moderately coarsely punctate, punctures well separated. Elytra about twice as long as prothorax; sides narrowed in front and behind; striæ distinctly impressed and with moderate punctures; intervals sparsely, somewhat granulately punctate. Prosternum rather sparsely punctate at middle, punctures coarser at sides and near base; side pieces more coarsely punctate than prosternum; the first four ventral segments not densely punctate, the punctures at sides coarser than at middle; last ventral segments rather densely punctate. Penultimate tarsal joint scarcely lobed beneath. Length 5 mm. Southern Illinois.

One specimen of this peculiar little species in the collection of the late Ottomar Dietz. It is readily distinguished from any of our species by having the sides of the elytra narrowed in front and behind, which gives the prothorax the appearance of being wider than the elytra though the prothorax is not wider than the elytra a little above middle.

Drasterius subornatus n. sp. Rufo-testaceous; antennæ, legs and palpi paler; elytra with a rather indistinct postscutellar darker cloud and a more or less undulated subapical black fascia; pronotum with a faint apical darker cloud, which is absent in some specimens. Pubescence grayish white and a little longer than in *dorsalis*. Head moderately coarsely, not densely punctate; antennæ a little longer than the head and prothorax, third joint a little longer than second and both slightly longer than fourth. Prothorax a little longer than wide; sides feebly arcuate, almost parallel behind; basal angles slightly divergent and carinate; punctuation moderately coarse and not very close, punctures nearly equal over the entire surface. Scutellum flat. Elytra about twice as long as prothorax; sides feebly arcuate; apices conjointly rounded; striæ at base scarcely impressed, punctures moderate; intervals flat and finely, sparsely punctate. Under-side rather coarsely punctate, the first few abdominal segments more finely

* According to Champion, Biol. Cent. Am. Col., Vol. III, pt. 1, p. 365 (footnote), Say's *dorsalis* is wrongly placed as synonym of *elegans*. The latter is West Indian and distinct from the North American species.

punctate, the punctures gradually becoming smaller towards apex. Fourth tarsal joint scarcely excavate above. Length 5.25 mm. Brownsville, Texas.

The twenty-five specimens before me show very little variation, some specimens have the prothorax unicolorous, others have a faint, dark, apical cloud. This species differs from *dorsalis*, besides the different markings, in being smaller, the punctuation of prothorax a little more dense and the surface more depressed; the last mentioned characters separate it also from *amabilis*, which, however, has the fourth tarsal joints rather more deeply excavated above than *subornatus* and *dorsalis*. From *livens*, which is also more depressed than *dorsalis* and *amabilis*, it differs besides other characters, in having a stronger punctuation of prothorax and elytral striæ.

Drasterius (Aeolus) nigriventris n. sp. Moderately elongate, rufo-testaceous, antennæ, palpi and legs paler; underside, except at sides, head, a broad median line on prothorax and sides more or less black; scutellum and suture near the latter a broad, oblique blotch, starting from humeri to about the second or third stria and a broad, subapical, undulated fascia, also black. Pubescence sparse and fine. Head rather coarsely punctate; antennæ nearly as long as head and prothorax, third joint a little longer than second, both together longer than fourth. Prothorax slightly longer than wide; sides slightly arcuate and feebly narrowing towards apex, hind angles feebly divergent and acutely carinate, carina moderately long, occupying nearly basal third; surface coarsely and moderately closely punctate at sides, the punctures finer at the middle. Elytra about twice as long as prothorax, sides arcuately narrowing from a little below middle, apex conjointly rounded; striæ moderately impressed, punctures of the first few striæ rather small and not closely placed, becoming larger and closer at sides; intervals flat, sparsely and finely punctate. Prosternum, metasternum and the first few ventral segments at sides coarsely punctate, the latter more finely punctate at middle. Fourth joint of tarsi slightly excavate above. Length 6 mm. Brownsville, Texas.

This species resembles superficially *amabilis* but has a larger and anteriorly less narrowed prothorax, less divergent hind angles with longer carina and sides more or less piceous; the underside, except at sides and apex is piceous or black. It seems to be allied to the Mexican *pulchellus* Caud. but that species has the carina of the hind angles about half of the length of the latter.

Drasterius (Aeolus) scutellatus n. sp. Similar in color and markings to *dorsalis* Say, but of slightly narrower form. Head rather coarsely and moderately closely punctate; antennæ about as long as head and pro-

thorax, second and third joints together longer than fourth. Prothorax about as long as wide; sides moderately arcuate, gradually narrowing towards apex, hind angles slightly divergent with a moderately long, acute carina; surface rather coarsely and not very closely punctate, pubescence rather short and sparse. Scutellum conically raised in front. Elytra nearly twice as long as prothorax; sides scarcely arcuately to a little beyond middle thence rather more arcuately to narrowing towards the conjointly rounded apices; striæ distinctly impressed and with close, moderate coarse punctures which are coarser towards the sides; intervals feebly convex, sparsely and rather finely punctate; surface sparsely clothed with short, gray hairs. Prosternum rather coarsely but not densely punctate, the punctures finer near apex; side pieces more densely punctate. Abdominal segments one to four, not densely punctate, the punctures coarser at sides than at middle, last segment finely and densely punctate towards apex. Fourth tarsal joint slightly excavated above. Length 7 (type)—5.5 mm. Brownsville, Texas.

This species differs from all our known N. Am. species in the conical raised scutellum. Small specimens resemble *amabilis* in form more than *dorsalis* but, besides the different form of scutellum, have longer carinae of the hind angles of prothorax and coarser elytral striæ. It is evidently closely allied to the Mexican *circumscriptus* Champ. with which the description and figure agrees very well, except that the interstices are said to be roughly punctured in that species, which are in *scutellatus* rather finely punctured.

Megapenthes nigriceps Schaef.—In the material collected in Brownsville, Texas, by the late Ottomar Dietz I found a female of this species, which I described from a single male collected by myself. This female has the head not piceous or black but dark ferruginous behind and paler in front, otherwise it does not differ from the male except, as usual, in stouter form, shorter antennæ, etc.

Betarmon californicus n. sp. Antennæ, head, legs and underside, except side pieces of prosternum, base of elytra and a rather broad, but indefinite sutural stripe black or piceous; pronotum and side pieces of prosternum yellowish ferruginous and sides of elytra pale yellowish brown. Surface sparsely pubescent with short yellowish hairs. Head rather coarsely and densely punctate, front distinctly margined and arcuate. Prothorax slightly longer than wide; sides gradually converging from base of hind angles to a little above middle, then arcuately narrowing to apex; hind angles rather feebly diverging and not carinate; surface closely punctate with moderately coarse punctures. Elytra a little more than twice as long as pro-

thorax, scarcely wider at base than prothorax a little above hind angles, gradually widening towards a little beyond middle, thence arcuately narrowing to apex, apices subtruncate; striae scarcely impressed and with moderate, close, somewhat elongate punctures; intervals rather sparsely punctate and more or less transversely rugose. Prosternum shining, coarsely and closely punctate, side pieces rather dull and more densely punctate, with smaller punctures than at middle. Metasternum and abdomen not densely punctate with moderate punctures; coxal plates rather suddenly dilated inwards with the exterior angle rounded. Tarsi simple. Length 7 mm. Tulare Co., California.

This species, a single male, was in the material received by the late Ottomar Dietz from the above named locality and I am under the impression that I have seen other specimens of this species showing variation in the coloration of elytra, being either entirely piceous or with the dark sutural stripe narrower and the sides paler than in the type specimen.

B. bigeminatus Rand. our only other species differs from the above described species, besides coloration, in having distinctly and rather sharply carinated hind angles and shorter antennal joints. Both species, *bigeminatus* and *californicus* are not typical *Betarmon*. The third tarsal joint in the type species of the genus, the European *B. ferrugineus*, has the fourth tarsal joint very small, and the third dilated and with a small lobe, while in our species the tarsi are simple. In Genera Insectorum, Coleoptera, family Elateridae. Otto Schwarz failed to list our *Betarmon bigeminatus*.

Oxygonus montanus n. sp. Form elongate, head and prothorax black, elytra blackish brown, first joint of antennae and legs reddish. Head moderately coarsely and not densely punctate. Antennae nearly as long as the head and prothorax, joint two shorter than third, fourth a little shorter than third and slightly longer than wide at apex, joints four to ten, about as long as wide and feebly serrate, joint eleven elongate oval and a little longer than the tenth. Prothorax about as long as wide, feebly narrowing towards apex, sides scarcely arcuate, hind angles acutely prolonged, moderately divergent and not carinate; surface with moderate and well separated punctures, which are a little coarser toward apex and finer near base; pubescence grayish white and longer than on elytra. Elytra as wide at base as the thorax; sides feebly arcuate and nearly parallel, narrowed and conjointly rounded near apex; surface with moderately impressed and not coarsely punctured striae; intervals rather flat and not densely but confusedly punctate, covered rather sparsely with short grayish white hairs. Metasternum and abdomen rather finely, not densely punctate and

covered with short grayish white hairs. Length 8.25 mm. Catskill Mts., Ulster Co., N. Y.

I have seen two specimens of this interesting little species, collected by Mr. Ernest Shoemaker, one of which he allowed me to retain for the Museum collection.

This species differs from *obesus* by its narrower and more elongate form, differently formed prothorax, relatively longer third antennal joint and lateral margin of elytra scarcely at all reflexed. It seems to be similar in form to the Californian *ater*, but that species is black, including legs, has the prothorax coarsely punctate with hind angles carinate, elytral intervals biserially punctured and the body beneath deeply punctured.

A Year of Costa Rican Natural History. By AMELIA SMITH CALVERT, Sometime Fellow in Biology, Bryn Mawr College, and PHILIP POWELL CALVERT, Professor of Zoology, University of Pennsylvania, Editor of Entomological News. With Maps and Illustrations. New York: The Macmillan Company. 1917.

The topography of this paper is all that may be desired and there are 577 pages, 141 plates and figures and a full-page frontispiece in color, also a general map of the country.

A greater interest is continually being taken in foreign countries by the tourist, the naturalist and the business man. Increased and more comfortable facilities for travel, in addition to speed, make such countries far more attainable. More persons at present are taking an interest in nature and the ordinary work of travel frequently gives scant treatment to the plants, mammals, birds, reptiles and insects of the country visited. While the present work gives ample description of the geography, topography, geology and climate, the greater part of the book is devoted to the living forms of life. It particularly treats of the insects and plants. The dragonflies, among the insects, receive the largest share of attention as one of the authors is an authority on these insects and many new facts were obtained as to their distribution, habits and life history. The whole work well repays perusal but there are some specially interesting chapters for the student of nature, among these being "Juan Vinas—The Waterfalls," in which valuable and new observations are made on the dragonfly, *Thaumatoneura*. Fascinating descriptions are given of the ascent of the volcanoes Irazu and Poas.

A thrilling chapter is entitled "Carthago Deleta Est" and must be read